

CLAIMS

1. (Original) A communications system for communicating between points of presence and customer premises comprising:
a plurality of ATM nodes,
first connection means for connecting said ATM nodes to said customer premises,
second connection means for connecting said ATM nodes to said points of presence,
a plurality of transports connecting said ATM nodes in an ATM network having a mesh architecture,
control means for controlling the routing of data among said ATM nodes to enable the transport of information between said points of presence and said customer premises.

2. (Original) The communications system of Claim 1 wherein said ATM nodes are environmentally-hardened.

3. (Original) The communications system of Claim 2 wherein said ATM nodes are all-weather hardened for outdoor installation.

4. (Original) The communications system of Claim 3 wherein said ATM nodes are located in utility-pole-mountable enclosures.

5. (Original) The communications system of Claim 1 wherein said transports are wireless.

6. (Original) The communications system of Claim 1 wherein said first connection means are wireless.

7. (Original) The communications system of Claim 1 wherein said ATM nodes are multiplexers.

1 8. (Original) The communications system of Claim 1 wherein said ATM nodes are
2 switches.

1 9. (Original) The communications system of Claim 1 wherein said control means operates
2 to determine the quality of communications over said transports and establishes routing based upon
3 said quality.

1 10. (Original) The communications system of Claim 1 wherein said ATM nodes are
2 supervised by an element manager.

1 11. (Original) The communications system of Claim 1 wherein said ATM network connects
2 to an ILEC central office.

1 12. (Original) The communications system of Claim 1 wherein said ATM network connects
2 to a CLEC office.

1 13. (Original) The communications system of Claim 1 wherein said ATM network connects
2 to other networks.

1 14. (Original) The communications system of Claim 13 wherein said other networks
2 include the Internet.

1 15. (Original) The communications system of Claim 1 operating for servicing said customer
2 premises where said customer premises are connected to access points and use an established
3 backhaul transport to an office wherein,

4 said first connection means includes,

5 one or more remote digital subscriber line access multiplexers,

6 access connecting means for connecting said access multiplexers to said access
7 points,

8 and wherein,

9 said ATM network forms an alternate backhaul transport for connecting said access
10 multiplexers to provide broadband services to said customer premises.

1 16. (Original) The communications system of Claim 15 wherein said access multiplexers
environmentally-hardened in are all-weather, pole-mountable enclosures.

2 17. (Original) The communications system of Claim 15 wherein said office is an ILEC
central office and said alternate backhaul transport connects to said ILEC central office, to a CLEC
3 office and to other networks.

4 18. (Original) In a communications system for communications between points of presence
and customer premises, a method comprising:

5 enabling a plurality of transports to connect a plurality of ATM nodes in an ATM network,

6 connecting said communications between said ATM nodes and said customer premises,

7 connecting said communications between said ATM nodes and said points of presence,

8 controlling the routing of communications among said ATM nodes to enable the transport

9 of said communications between said points of presence and said customer premises.

1 19. (Original) The method of Claim 18 wherein said ATM nodes are environmentally-
2 hardened.

1 20. (Original) The method of Claim 19 wherein said ATM nodes are all-weather hardened
2 for outdoor installation.

1 21. (Original) The method of Claim 18 wherein said ATM nodes are located in pole-
2 mountable enclosures.

1 22. (Original) The method of Claim 18 wherein said transports are wireless.

1 23. (Original) The method of Claim 18 wherein the connection of said communications
2 between said ATM nodes and said customer premises uses wireless transports.

1 24. (Original) The method of Claim 18 wherein said ATM nodes are multiplexers.

25. (Original) The method of Claim 18 wherein said ATM nodes are switches.

1 26. (Original) The method of Claim 18 wherein said control means operates to determine
2 the quality of communications over said transports and establishes ATM network routing based upon
3 said quality.

4 27. (Original) The method of Claim 26 wherein said quality of communications is based
5 on bit error rate measurements.

1 28. (Original) The method of Claim 26 wherein said quality of communications is based
2 on received signal strength indications.

1 29. (Original) The method of Claim 26 wherein said control means periodically updates
2 a radio management information data base with said quality of communications.

1 30. (Original) The method of Claim 29 wherein said data base stores an ATM Resource
2 Availability Information Group.

1 31. (Original) The method of Claim 30 wherein said ATM Resource Availability
2 Information Group includes one or more of peak cell rate, available cell rate and cell loss ratio
3 parameters.
4

5 32. (Original) The method of Claim 29 wherein said control means periodically examines
6 said data base and responsively adjusts the ATM network routing topology.

1 33. (Original) The method of Claim 18 wherein said ATM nodes are supervised by an
2 element manager.

3 34. (Original) A communications system for servicing customer premises connected to
4 access points and connected over an established backhaul transport to an office comprising:
5 an access network formed of one or more environmentally-hardened remote digital
6 subscriber line access multiplexers in pole-mountable enclosures and a plurality of
7 access wireless transports connecting said access multiplexers,
8 access connecting means for connecting said access multiplexers to said access points,
9 a mesh network forming a backhaul transport for connecting said access multiplexers to
10 provide broadband services to said mesh network including a plurality of ATM nodes
11 connected by a plurality of node wireless transports using a mesh architecture and
12 having redundant connections,
a plurality of inter-network wireless transports connecting said access network to said mesh
network.

1 35. (Original) The communications system of Claim 34 wherein said office is an ILEC
2 central office and said alternate backhaul transport connects to one or more of said ILEC central
3 office, to a CLEC office and to other networks.

1 36. (Original) The communications system of Claim 34 wherein said access multiplexers
2 are all-weather hardened for outdoor installation and interconnected by wireless transports.

1 37. (Original) The communications system of Claim 36 wherein said access multiplexers
2 are located in pole-mountable, all-weather enclosures without need for ground-based power
3 connections.

1 38. (Original) The communications system of Claim 34 wherein said access multiplexers
2 include a processor unit, an ATM assembler and disassembler unit and an ATM switch fabric.

1 39. (Original) The communications system of Claim 34 wherein each of said access
2 multiplexers includes a master unit and one or more trunk interface units.

1 40. (Original) The communications system of Claim 39 wherein said master unit is in an
2 all-weather hardened enclosure and said trunk interface units are each in separate all-weather, pole-
3 mountable trunk interface enclosures.

1 41. (Original) A communications system for servicing customers connected to access points
2 and using an established backhaul transport to an office comprising:
3 one or more all-weather, environmentally-hardened, remote digital subscriber line access
4 multiplexers in pole-mountable enclosures,
5 access connecting means for connecting said access multiplexers to said access points,
6 an alternate backhaul transport for connecting said access multiplexers to provide broadband
7 services to said customers wherein said alternate backhaul transport includes,
8 a plurality of ATM switches in pole-mountable enclosures connected by a
9 plurality of switch wireless transports to form an ATM network
10 having redundant connections,
11 control means to determine the quality of communications over said switch
12 wireless transports and to establish routing in said ATM network
13 based upon said quality,
14 a plurality of second wireless transports connecting said access multiplexers
15 to form an access network having redundant connections,
16 a plurality of internetwork wireless transports connecting said access network
17 to said mesh network.